Remarks/Arguments:

Claims 1-5 and 7-33 are pending in the above-identified application. Claims 1, 8, 14, 20, 22, 28 and 29 are amended. Claim 6 is canceled. Basis for these amendments may be found in claim 6 as filed and in paragraphs [0028], [0030], [0063] and [0064] of the application as filed.

Claims 1-13 were rejected under 35 U.S.C. § 102(e) as being obvious in view of Molnar et al. (U.S. 2002/0142741, hereinafter "Molnar"), Kaewell et al. (U.S. 6,775,531, hereinafter "Kaewell") and Lindlar et al. (U.S. 7,149,473, hereinafter "Lindlar"). Claims 14-20 and 22-33 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Molnar, Kaewell, Lindlar and Syrjarinne et al. (U.S. 2003/0107514, hereinafter "Syrjarinne"). Claim 21 was rejected for non-statutory double patenting as being obvious in view of claims 1-3 of U.S. patent no 7,634,025 in view of Molnar. Applicant requests reconsideration of these rejections. In particular, neither Molnar, Kaewall, Lindlar, Syrjarinne nor their combination disclose or suggest,

> a bi-directional serial message interface for communicating a power control message from the baseband section to the RF section; and a data interface for communicating data from the RF section to the baseband section, wherein the RF section includes a register for receiving the power control message from the baseband section and wherein devices to be controlled by the power control message are coupled to the register to receive respective power control data from the received power control message,

as required by claim 1. Claims 8, 14, 22 and 29 include similar limitations.

Molnar concerns a low-voltage digital interface. In the Office Action, it is asserted that Molnar discloses a serial message interface for communicating a power control message from the baseband section to the RF section that is associated with power consumption of the RF section. Applicant respectfully disagrees with this assertion. Molnar does not disclose or suggest sending any power control messages via the serial interface. In support of this assertion, the Examiner points to paragraph [0047] of Molnar. While this paragraph does describe a serial interface 332 via which control signals may be conveyed from the baseband module to the RF module, it does not disclose or suggest that any of these control signals may be a power control signal.

Indeed, Molnar teaches that power control of the RF module and the other modules in the system is accomplished by the power module 206. For example, paragraph [0040] states:

> The module 206 is coupled to a power supply 210. The power supply 210 may be a battery or other power source and may be implemented as a power management integrated circuit (PMIC) on a single die. The power module 206 controls the power supply for all of the other components of the mobile communications device 22.

Contrary to the assertion by the Examiner, this passage indicates that power control in the mobile communications device is accomplished using a power management integrated circuit. From this passage, the skilled person would understand that the power control module 206 autonomously controls power to the RF module. Thus, the skilled person would not understand Molnar as sending power control messages from the baseband module to the power control module. In the Office Action, the Examiner asserts that the control messages include power control bits. To support this assertion, the Examiner points to the Abstract and paragraphs [0010], [0047] and [0057] to [0060] of Molnar. None of these paragraphs, however, indicates that the messages include power control bits.

In response to Applicant's arguments, the Examiner asserts, "however, connection 326 clearly provide (sic) control signals that would control operating voltage Vco of RF components such as demodulator, synthesizer, upconverter, downconverter." Applicants respectfully disagree with this assertion. Connection 326 is the clock, data and latch enable (LE) signals that make up the serial interface between the baseband module and the RF module. There is no indication in Molnar that any of these signals or the data values sent via the data line control the power consumption of any component in the RF section. Indeed, Fig. 4 shows details of the local level shifter (LLS) that is connected to each of the demodulator 384, downconverter 370, synthesizer 354 and modulator/up converter 344. As shown in Fig. 4, Vco is the power signal for the LLS. The output signal of the LLS is not a power signal, as asserted by the examiner but a data signal.

There are, however, other indications of the functions controlled by the serial interface. In particular, in paragraph [0052], it is stated that "switch 360 controls whether the amplified signal on connection 358 is transferred to antenna 26 or whether a received signal from the antenna 26 is supplied to receive filter 362. the operation of switch 360 is controlled by a control signal from baseband module 202."

Although Molnar does not explicitly describe the control messages that are sent, in paragraph [0008], Molnar indicates that the problem addressed by the invention is that, "When the radio frequency integrated circuit is powered up, the baseband module has to reconfigure

the radio frequency integrated circuit. This results in a great deal of undesirable baseband module programming latency and excessive power consumption." This problem is addressed in the invention, by storing the configuration in the RF module so that, when the RF module is powered up, the configuration commands are available. (See paragraph [0060], "The low voltage digital interface results in overall power savings for the wireless communication device 22 because test registers and main registers within the radio frequency integrated circuit 338 need not be reprogrammed when powering up the radio frequency integrated circuit 338. Although described with particular reference to a portable transceiver, the low voltage digital interface system can be implemented in any system in which it is desirable to minimize redundant programming and save power.")

As described above, the only description of power control in Molnar is in paragraph [0040] which states that "[t]he power module 206 controls the power supply for all of the other components of the mobile communications device." If the serial interface 326 were to provide power control messages, as required by claim 1, then it would need to be coupled to the power module 206. No such coupling is shown, however. Thus, there is no basis in Molnar to support the Examiner's assertion that Molnar discloses "a serial message interface for communicating a power control message from the baseband section to the RF section."

If the Examiner continues to assert that Molnar discloses sending power control messages via the serial interface 326, Applicant requests that the Examiner point to explicit language in Molnar being used as the basis for this assertion.

Furthermore, Claims 1, 14, 22 and 28 all require a bidirectional serial interface. This limitation of the claims is not addressed in the Office Action. The only serial interface in the prior art references is the unidirectional interface disclosed by Molnar.

Kaewell relates to a subscriber unit of time-division multiple access (TDMA) radiotelephone system. Kaewell does not disclose or suggest "a serial message interface for communicating a power control message from the baseband section to the RF section." as required by claims 1, 8, 14, 22 and 29. At column 12, lines 21-36, Kaewell describes a power control circuit 151 that receives three signals, indicating the state of the subscriber unit, and produces three power control signals for the subscriber unit. Because this is a TDMA system, the power control signals have strict timing constraints. (See tables 1 and 2 and Figs. 5 and 6). Because of these constraints, one of ordinary skill in the art would not use a serial bus to

transmit the power commands. First, as shown in Table 1 and Fig. 5, the timing of the switching of the power control signals must occur on a sub-millisecond basis and must be coordinated between the receive and transmit circuitry. The skilled person would not modify Kaewell to include a message facility such as that shown in Molnar because the timing of the various signals could not be controlled with the precision required for TDMA operation. Thus, Kaewell does not provide the material that is missing from Molnar.

Furthermore the Examiner has not provided any analysis of the qualifications of a person of ordinary skill in the art as required under MPEP § 2141.03 nor has he provided any "articulated reasoning with rational underpinning" to support the modification of Molnar by Kaewell.[1] Indeed, the Examiner has not provided any reason why a skilled person would modify Molnar to include the teachings of Kaewell. Thus, the Examiner has failed to properly state a case of *prima facie* obviousness and the combination of Molnar and Kaewell is improper. (See MPEP § 2142).

Lindlar concerns an interface between baseband circuitry and RF circuitry in a Bluetooth device. The Lindlar system does not disclose or suggest "a serial message interface for communicating a power control message from the baseband section to the RF section." Instead, Lindlar teaches the use of hard-wired power control signals. In the Office Action, two power control elements are identified 1) the signal SleepX which removes power from the entire RF section and 2) the signal PAON which controls power to the power amplifier 276. Neither of these signals is a part of a "message" as the term would be understood by a skilled person upon reading the subject patent application nor is it communicated from the baseband section to the RF section via "a serial message interface," as required by claims 1, 8, 14, 22 and 29.

The signal SleepX in Lindlar is identified as a signal at column 2, lines 51-53. As shown in Figs. 1a and 1b of Lindlar, the SleepX signal is generated in the baseband circuitry 100 and is logically combined with signals internal to the RF circuitry 200 before being applied to the power supply regulator 240 and reference oscillator 250 in the RF circuitry 200. As shown in Fig. 1c, the signal PAON is provided via RF Bus2 in transmit mode and applied directly to the power amplifier 276. At column 7, lines 1-7, Lindlar identifies PAON as a signal and states that "[t]he switching on and off of the Power Amplifier is 'time critical' as it must be controlled over

[1] [R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. 550 US 398 at 418 (2007) (citing In re Kahn, 441 F.3d at 988 82 USPQ2d at 1396. MPEP 2141 (III)

time scales of less than 1 bit duration." Thus, the PAON signal could not be a part of a power control message communicated via a serial message interface from the baseband section to the RF section.

Claim 1 further recites, that the "the RF section includes a register for receiving the power control message from the baseband section and wherein devices to be controlled by the power control message are coupled to the register to receive respective power control data from the received power control message." Similarly, claim 8 recites, "storing the power control message in a register internal to the RF section wherein devices to be controlled by the power control message are coupled to the register to receive respective power control data from the stored power control message." Neither Molnar, Kaewell, Lindlar nor their combination disclose or suggest such a register which stores a power control message wherein the devices to be controlled by the power control message are coupled to the register to receive respective power control data. This register, which stores the message provided by the baseband section according to the subject application, illustrates the difference between a message according to claims 1 and 8 of the subject invention, and the signals used in Lindlar.

Using a message to transfer power control messages rather than dedicated signals or a separate power control module has the advantage of reducing the number of signal lines between the baseband and RF sections. In Lindlar, separate signal lines are required for the SleepX and PAON signals. Control of more than one device in the RF section, according to Lindlar, would require a separate signal line for each device. According to the subject invention, however, power control messages are sent between the baseband and RF sections via a single message interface and are received by a register. The devices to be controlled by the power control message are coupled to the register to receive respective power control data from the received power control message. Furthermore, the Examiner has not provided any "articulated reasoning with rational underpinnings" to support the combination of Molnar, Kaewell and Lindlar. Thus, the Examiner has failed to state a *prima facie* case of obviousness (See MPEP § 2142).

Syrjarinne was cited as disclosing a GPS receiver. In addition, in the Office Action, it is asserted that Syrjarinne discloses a low power standby mode for the GPS receiver for power saving. The power control in Syrjarinne, however, is implemented using a power control module that monitors the mode mix provided by the mode selector to define appropriate on-off duty cycles for the RF front end and baseband processor. The power control is implemented

entirely in the power control module (See paragraphs [0030] and [0039]). Thus, Syrjarinne can not disclose or suggest:

> a bi-directional serial message interface for communicating messages between the RF processing section and a baseband processing section, including receiving a power control message from the baseband processing section wherein the power control message is associated with power consumption of the RF processing section, wherein the RF section includes a register for receiving the power control message from the baseband section and wherein devices to be controlled by the power control message are coupled to the register to receive respective power control data from the received power control message,

as required by claim 14. Claims 22 and 28 include similar limitations. Consequently, Syrjarinne can not provide the material that is missing from Molnar, Kaewell and Lindlar.

Furthermore, the Examiner has not provided any "articulated reasoning with rational underpinnings" to support the combination of Syrjarinne with any of the other references. Thus, the Examiner has failed to state a *prima facie* case of obviousness.

Because neither Molnar, Lindlar, Kaewell nor Syrjarinne either alone or in combination disclose or suggest these limitations of claims 14, 22 and 28 and because claims 14-17, 19-20 and 21 depend from claim 14; claims 23-25 and 27 depend from claim 22 and claims 29-31 and 33 depend from claim 28, these claims are not subject to rejection under 35 U.S.C. § 103(a) in view of Molnar, Kaewell, Lindlar and Syrjarinne.

Applicant appreciates the indication in the Office Action that claim 21 is objected to as being dependent on a rejected base claim but would be allowable if rewritten to be independent in form and to include the limitations of claims 14, 15 and 20 from which it depends. As set forth above, claims 14, 15 and 20 are not subject to rejection in view of any of the cited references. Accordingly, there is no need to amend claim 21.

Claim 21 was rejected for nonstatutory obviousness-type double patenting in view of claims 1-3 of Patent no. 7,634,025 and Molnar. In the Office Action, it is admitted that claims 1-3 of Patent no. 7,634,025 do not include a register to receive power control messages from a baseband unit and cites Molnar as disclosing this feature. As set forth above, however, this feature is not disclosed or suggested by Molnar. Contrary to the Examiner's assertion, Molnar does not disclose or suggest that the register in Molnar receives any power control messages. Applicant further notes that, as described above, Molnar does not disclose or suggest a serial

message interface for communicating a power control message from the baseband section to the RF section. This limitation is also absent from claims 1-3 of U.S. Patent no. 7,634,025. Consequently, claim 21 is not subject to rejection for nonstatutory obviousness-type double patenting in view of claims 1-3 Patent no. 7,634,025 and Molnar.

Applicant again points out that, in the Office Action, the Examiner provides unsupported assertions as to the operation of the Power Management IC. If the Examiner intends to rely on any of these assertions in a future rejection, Applicant respectfully requests the examiner to provide substantial evidence on the record or an appropriate declaration or affidavit to support the assertions.

The examiner also notes that "although 'message' and 'signal' are two different terminologies, they are both meaning the same for Molnar and the claimed invention because they both provide control bits in a message/signal to a serial interface for controlling power of RF components." Applicant notes that pursuant to MPEP section 2181, "claim language must be analyzed not in a vacuum but in light of: (A) the content of the particular application disclosure; (B) the teachings of the prior art; and (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made." As set forth above, the claims explicitly recite "a power control **message**," also as set forth above, there are significant differences between messages and signals. As described above, in Molnar, the message is used to configure the RF unit, not to control its power state. In Kaewell and Lindlar, signals are needed due to the timing constraints on switching on and off the devices in the RF section. Thus, "message" and "signal" are different concepts and may not be conflated. Consequently, in view of the teachings of the specification, the words used in the claim, and the teachings of Kaewell and Lindlar, the Examiner is not entitled to ignore the word "message" when interpreting the claim. Thus, as described above, a message is not equivalent to a signal

In view of the foregoing amendments and remarks Applicant requests that the Examiner reconsider and withdraw the rejection of claims 1-33.

Respectfully submitted,

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